

need arises when a print request is issued. Though four printers have been set as the distributed printers in this implementation, the number of printers is not limited to this. Further, as printers in the present invention, a variety of printers, such as printer adopting electrophotographing method, ink-jet method, thermal transfer method may be used. Furthermore, printers incorporated within a facsimile machine, a digital composite apparatus, and so on, may be also used in the present invention. Further, the application program 11 and the virtual distributed printer 12 need not be installed in the same personal computer; the virtual distributed printer 12 may exist on the side of a print server and the application program 11 may exist on the side of a print client. By delivering a file from the application program 11 to the virtual distributed printer 12 in an intermediate-file format such as a metafile via an operating system, a specific page can be extracted from the intermediate file and various methods can be applied as methods of dealing with printer malfunctions.

Distributed printing processing described in this embodiment is executed by performing printing by having the application program 11 specify the virtual distributed printer 12 as a print-destination printer.

Fig. 2 is a block diagram useful in describing the internal structure of the host computer 1 in the

distributed printing system according to this invention. Fig. 2 combines hardware blocks and functional processing blocks in order to simplify the description. The host computer 1 includes a system bus 21, a CPU 22  
5 for performing overall system control, a ROM 23 to which control code of the distributed printing processing of this invention executed by the CPU 22 has been written, a RAM 24 and an image management unit 25 in which intermediate files such as RAW or EMF formatted files  
10 are stored. A job management unit 26 constituted by a functional block (provided by a module constituting part of the distributed printing program) monitors printer status, acquires information indicating that a print job has been performed normally or, if a malfunction has  
15 occurred during printing, information indicating the page number up to which printing was performed, and notifies a distributed printing unit 210 when a malfunction has been detected. The distributed printing unit 210 also is implemented by a functional block. The  
20 host computer 1 further includes a key input unit 27 by which the user operates keys, and a display unit 28, such as a CRT. The display unit 28 displays the content of job management, allowing the user to perform the necessary operations. It should be noted that the  
25 content displayed on the display unit 28 practically corresponds to the content based on image information for user interface, included in a control program of the

present invention, displayed via an operating system.  
Figs. 3 and 4 (will be described later) are examples of  
such displayed contents.

The host computer 1 further includes an application  
5 printing unit 29 and the distributed printing unit 210,  
which corresponds to the virtual distributed printer 12  
of Fig. 1. Both of these are modules in the functional  
block diagram. The application printing unit 29  
receives a print request from the application program 11  
10 and delivers print data to the image management unit 25.  
The latter delivers the print request to the distributed  
printing unit 210 if the request is for distributed  
printing. If the print request is received from the  
application printing unit 29, the distributed printing  
15 unit 210 delivers a distributed printing output to  
registered printers in accordance with a stored  
distribution algorithm. Here the print data is received  
from the image management unit 25 and, if necessary, the  
print data is reconstructed and the reconstructed print  
20 data is output (reassigned) upon being converted to a  
print job capable of being interpreted by the printer  
that is to print the data using a printer driver, which  
is not shown. The print job thus obtained by the  
conversion consists of printer language such as Page  
25 Description Language. If printer malfunction (as the  
status of the printer) is reported by the job management  
unit 26, reprint processing is executed based upon a